

REMARKS

Upon entry of this amendment, claims 1, 2, 4, 5, 7 and 8 are pending, of which claims 1 and 4 are independent. Applicants amend claims 1 and 4. Support for the amendments can be found throughout the Specification and specifically at page 16 of the Specification. No new matter is added. Applicants respectfully submit that the pending claims define over the art of record.

Claim Rejections under 35 U.S.C. §112

Claims 1, 2 and 7 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement.

The Examiner asserts that the limitation “a control unit programmed to determine” is not supported by the disclosure. Claim 1 is amended to recite that the control unit is “configured to determine.” Support for this amendment can be found at page 16 of the Specification.

The Examiner further asserts that the Specification discloses an abnormal state determining unit, but does not disclose that the unit is a programmed unit, nor a control unit. *See* Office Action, page 3, lines 1-3. Applicants respectfully submit that the Specification recites “an abnormal state determining unit, for example, a step S04 in the embodiment” on page 4 and “in step S04, the control unit determines whether or not the detection value of voltage outputted from the hydrogen sensor is larger than the determination threshold value obtained from the memory unit” on page 16. Accordingly, the Specification discloses that the abnormal state determining unit is a control unit.

In light of the arguments presented above, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 1, 2 and 7 under 35 U.S.C. §112.

Claim Rejections under 35 U.S.C. §103

Claims 1-8 are rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,461,751 to Boehm (hereafter “Boehm”) in view of U.S. Patent Application Publication No. 2001/0014414 by Okamoto et al. (hereafter “Okamoto”) and U.S. Patent No. 4,904,548 to Tajima (hereafter “Tajima”).

The Examiner asserts that the controller (105) of the Boehm reference is equivalent to the operating state detecting unit recited in claim 1. *See* Office Action, page 4, ¶ 2. The Examiner further asserts that the Boehm reference does not disclose a programmed controller to compare the oxidant stream mass flow rate with the maximum desired mass flow rate. However, the Examiner cites to *In re Venner et al.*, 262 F.2d 91 to indicate that it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *See* Office Action, page 4, ¶ 1.

Applicants respectfully disagree. *Venner* concerns a patent application in which a person's manual activity of withdrawing a middle core section of a molding apparatus after a predetermined period of time was replaced with an automatic timer. 262 F.2d at 92. In *Venner*, it was established that the prior art of record showed manually initiating withdrawal of the middle core section of the molding apparatus after a predetermined period of time. 262 F.2d at 94. Furthermore, the automatic timer of *Venner* does not compute the molding period: it is the experienced human who enters the end time by which the timer should automate the withdrawal of the middle core section of the molding apparatus based on many years of experience. In contrast, in the present application, the control unit does not replace a human activity. In fact, the apparatus protecting a fuel cell comprising the control unit is part of a vehicle's motor where human intervention is not anticipated or usually required. The control unit recited in claims 1 and 4 makes a determination based upon a plurality of detections supplied to the control unit, and not based on the experience of a trained person.

The Examiner further indicates that the Boehm reference does not disclose a pressure detector, a flow rate detector and a current controller. The Examiner relies on the Okamoto reference and the Tajima reference to find these elements. *See* Office Action, page 5, ¶ 2-3.

Applicants respectfully submit that the control unit recited in claims 1 and 4 is not a mere mechanical or automatic means to replace manual activity which can accomplish the same result. Claims 1 and 4 are amended to further clarify the functions of the control unit. The operating state detecting unit, as recited in claims 1 and 4, detects the pressure of the reaction gases supplied to the anode and the cathode, the flow rate of the reaction gases supplied to the anode and the cathode, and the generated current of the fuel cell. It is the control unit, coupled to the

operating state detecting unit, that determines the operating state of the fuel cell based on the detections supplied to the control unit by the operating state detecting unit.

Applicants respectfully submit that the combination of the Boehm, Okamoto and Tajima references do not teach or suggest *a control unit that determines the operating state of the fuel cell based on a plurality of detections supplied to the control unit by the operating state detecting unit, the detections comprising a detection of the pressure of the reaction gases supplied to the anode and the cathode, a detection of the flow rate of the reaction gases supplied to the anode and the cathode and a detection of the generated current of the fuel cell*, as recited by Applicants' independent claims.

Dependent claims incorporate each and every element of the independent claim upon which they depend. Applicants respectfully submit that the Boehm, Okamoto and Tajima references do not teach or suggest each and every element of claims 1, 2, 4, 5, 7 and 8. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 1, 2, 4, 5, 7 and 8 under 35 U.S.C. § 103(a).

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. NGW-009RCE2. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. § 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

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Respectfully submitted,

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